

NOTES ON SOME SPECIES OCCURRING IN THE UPPER WILLIAMS RIVER
AND BARRINGTON TOPS DISTRICTS, WITH DESCRIPTIONS OF TWO NEW
SPECIES AND TWO NEW VARIETIES.

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(Two Text-figures.)

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During an ecological survey of the rain-forests of the upper Williams River valley, and the montane and sub-alpine vegetation of the Barrington Tops districts, a number of species were collected which appeared worthy of record.

As has been described in a previous paper (Fraser and Vickery, 1937), the Barrington Tops is a more or less isolated plateau region rising to an altitude of 5,000 feet. It forms a part of the Mount Royal Ranges, but is surrounded on all sides by considerably lower ground. At the highest points it supports a mixed montane and sub-alpine vegetation, some species of which are identical with or show a close connection with those of the Kosciusko Plateau (7,000 feet) in the south of New South Wales, and in some cases with those of Tasmania. A few species occurring here have apparently not been found anywhere between the Barrington Tops and the Kosciusko Plateaus, which are several hundred miles distant. Many others are not known north of this district. The floristic relationships of the vegetation will be discussed more fully in a subsequent paper on the ecology of the district, but the remarkable distribution of some species made their occurrence here worthy of special comment.

The upper courses of the river valleys draining the Barrington Tops Plateau are partly occupied by sub-tropical rain-forest of Indo-Malayan affinities. This formation is best developed and most complex in structure on the coast of Queensland and northern New South Wales, becoming considerably attenuated in its floristic composition towards its southern limits, at about the Illawarra district of New South Wales. The gradual disappearance of the component species is, no doubt, largely due to temperature. Several species of this formation are not known to extend southwards beyond the Williams River Valley and associated river systems.

As a result of its rather isolated position, the flora of the Barrington Tops Plateau shows a degree of endemism, four species (*Diuris venosa* Rupp, *Prasophyllum Rogersii* Rupp, *Drimys purpurascens* J. Vickery and *Plantago palustris*, n. sp.) being known only from this district. Other species also, e.g., *Gentiana diemensis*, and *Acacia Clunies-Rossiae*, are represented by distinctive forms, which on further study may prove to be worthy of varietal or specific rank.

In this paper two new species and two new varieties are described from the Williams River and Barrington Tops district.

PTERIDOPHYTA.

Family POLYPODIACEAE.

Blechnum penna-marina Kuhn. occurs near creeks at an altitude of about 4,600-5,000 feet on the Barrington Tops Plateau. It occurs in Victoria and

Tasmania, and on the Kosciusko Plateau and southern tablelands of New South Wales, but is not recorded north of this area.

Family LYCOPODIACEAE.

Lycopodium clavatum var. *fastigiatum* Benth. has been previously recorded only from the Kosciusko Plateau in New South Wales, and extends to Tasmania.

MONOCOTYLEDONS.

Family GRAMINEAE.

Calamagrostis breviglumis Hackel is stated, in Moore and Betché's *Handbook of the Flora of New South Wales*, to be of rare occurrence. It is abundant in the grassland and near the swamps of the Barrington Tops Plateau, and has been observed by the writers to be plentiful on the Comboyne Plateau to the north, and on the Clyde Mountain to the south. The Barrington Tops Plateau is probably near its centre of distribution.

Hierochloa redolens R.Br. occurs occasionally beside creeks at an altitude of 4,800 feet. It has been previously known only from the Kosciusko Plateau in New South Wales, and from Victoria at high altitudes, and Tasmania.

Panicum lachnophyllum R.Br. has not previously been recorded from New South Wales, but occurs in Queensland. It occurs in the Williams River rain-forest in areas where sufficient light reaches to the ground stratum, but is rather rare. It has also been observed by the writers in the rain-forest at Mount Warning, close to the Queensland border.

Pollinia nuda Trin.—This exotic species has not previously been recorded from New South Wales. It extends from South Africa to India, China and Japan, as a shade-loving species. It occurs abundantly in the Williams River district as a river-bank species in the sub-tropical rain-forest, scrambling between the river boulders just above water level, where it receives a moderate amount of sunlight during the middle of the day. It is peculiar to find this exotic species naturalized in such an isolated district. It has not been observed by the writers in any other locality.

Family CYPERACEAE.

Carex cernua Boot. var. *lobolepis* F.v.M. has been known only from the New England district at the head of the Macleay and Bellinger Rivers.

Uncinia riparia R.Br. occurs in Tasmania, but has previously been recorded only from Yarrangobilly in this State.

Family JUNCACEAE.

Juncus falcatus E. Mey. has previously been recorded only from the southern highlands in the vicinity of Kosciusko, and on the Brindabella Ranges. It also occurs in Tasmania. On the Barrington Tops it occurs at an altitude of about 4,800 feet.

Family LILIACEAE.

Lomandra montana (R.Br.), nov. comb. Syn.: *Xerotes montana* R.Br. Prod., 1810, p. 262. *Xerotes montana* R.Br. was included by Bentham (*Fl. Aust.*, vii, p. 98) under *X. longifolia* R.Br. It differs from this species, however, in having a shorter and unbranched inflorescence, and fruits which are bright orange coloured and slightly succulent when fresh. It appears to be quite worthy of specific rank. *Lomandra montana* inhabits the rain forests and other shady places in the eastern parts of New South Wales. It is a common constituent of the ground flora in the rain-forest of the Williams River district.

Lomandra Hystrix (R.Br.), nov. comb. Syn.: *Xerotes Hystrix* R.Br. Prod., 1810, p. 262. *Xerotes Hystrix* R.Br. was also included by Bentham (*Fl. Aust.*, vii, p. 98) under *X. longifolia* R.Br., from which it differs in the very large, much branched inflorescence. *Lomandra Hystrix* is found from the Hunter River northwards to Queensland in coastal districts. In the Williams River district, and probably also elsewhere, it occurs as a rain-forest margin species, and is not uncommon in sunny areas within the forest, especially in very moist situations.

Family IRIDACEAE.

Libertia pulchella Spreng.—This district appears to be the northern limit of this species, which is known from the Blue Mountains and southwards to Tasmania.

Family ORCHIDACEAE.

In addition to *Diuris venosa* Rupp and *Prasophyllum Rogersii* Rupp, which are known only from the Barrington Tops Plateau, Rupp (1930 and 1937) records the Barrington Tops as the most northern known locality for *Adenochilus Nortonii* Fitzg., *Prasophyllum fimbriatum* R.Br. and *Pterostylis coccinea* Fitzg. *Pterostylis decurva* Rogers, *Pterostylis falcata* Rogers and *Chiloglottis Gunnii* Lindl. have been found only on the Barrington Tops and at Kosciusko in this State (or else in Victoria) and are also common in Tasmania. *Prasophyllum Hopsonii* Rupp is known only from the Allyn River valley immediately south of the Plateau.

DICOTYLEDONS.

Family FAGACEAE.

Nothofagus Moorei Oerst.—It is well known that the Barrington Tops Plateau is the southern limit of the antarctic beech. It is well developed at an altitude of about 4,000–4,500 feet, where it forms an extensive formation in any sheltered locality. It is also well developed on the MacPherson Ranges and at high altitudes in Queensland.

Family PROTEACEAE.

LOMATIA ARBORESCENS, n. sp. Text-fig. 1.

Arbor parva 4–10 m. alta in locis protectis vel frutex 1–4 m. altus in locis apertis; rami teretes, tenuiter pubescentes vel glabrescentes maturi, summae iuvenes ferrugineo-pubescentes; folia alterna, petiolaria; petioli 1–4 cm. longi, saepe puberuli praesertim ad basem; laminae lanceolatae vel ovato-lanceolatae, plerumque longiorae 3–4-plo aliquando 2-plo latis, 6–18 cm. \times 1.5–6 cm. sed aliquando parviores, acutae vel obtusae, contractae gradatim ad petiolos marginibus paulum dentatis, raro sub-laevis, nunquam lobatis, firmae, sub-coriaceae, saepe aliquanto palidiores raro glaucae subter, paulum lucentes supra, glabratae vel pilis paucis subter praesertim in nervo primo, nervis propinquis reticulatis manifestis supra, nervo primo prominente subter; racemi axillares, aliquando secundi, haud vel vix folia excedentes; pedunculi 8–16 cm. longi, nudi ad basem, simplices vel raro folium parvum ramo secundario in axillaro ferentes, floribus binariis puberulis; pedicelli pubescentes, graciles, 4–8 mm. longi; flores cremei in vivo, nigri in sicco; perianthium circa 7 mm. longum glabratum vel puberulum parte exteriori, glabratum parte interiori, tubiformum, oblique flexum ad apicem, disiunctum 4 segmentis maturitatum; segmenta angustata ad partem mediam, sed dilatata concavaque ad apicem; anthera sub-sessiles in apicis concavis segmentorum, lati, 1–1.5 mm. longi; glandes hypogynae 3, prope partem anteriorem floris, plus vel minus globosae, circa 1 mm. diam., persistentes; ovarium uni-carpellaris, polyspermum, super gynophorium circa 4 mm. longum ex quo tempore pollinationis; stylus 4–5 mm.

longus, persistens, ex parte posteriore emergens ante liberationem stigmatis; stigma obliqua, dilatata, aliquando conica; folliculus ovato-oblongus, 2.5-3.5 cm. \times 1-1.2 cm. nigro-fuscus, parte anteriore rectus; semina circa 10, planiusculi, 5-6 mm. diam., cum alis tenuibus membranaceis margine crassis 8-24 \times 5-7 mm. Williams River: in rain-forest (L. Fraser and J. Vickery, 12/1/1934, Type); at about 3,500 feet (L. Fraser and J. Vickery, 9/1/1934); Barrington Tops: below Carey's Peak (L. Fraser and J. Vickery, 8/1/1936); at 5,100 feet (J. L. Boorman, December, 1915); Nundle (M. H. Simon, July, 1913, No. 21); Comboyne, in rain-forest (L. Fraser and J. Vickery, 21/1/1934); Noorabark Station, New England Tableland (G. R. Brown, Nov., 1909); Coolpi Mountains (J. L. Boorman, October, 1909); Mt. Lindsay, Nandewar Ranges (H. M. R. Rupp, Nov., 1912, No. 28); at 4,500 feet (R. H. Cabbage, Nov., 1909, No. 2421); Wilson's Peak at Summit (Macpherson Range) (J. H. Maiden, Dec., 1907).



Text-fig. 1.—*Lomatia arborescens*. \times 0.4.

A small tree 4-10 m. high in sheltered situations, or a shrub 1-4 m. high in more exposed situations; branches terete, sparsely pubescent or almost glabrous at maturity, the young tips rusty pubescent; leaves alternate, petiolate; petioles 1-4 cm. long, often somewhat pubescent, especially at the base; laminae lanceolate to ovate-lanceolate, usually 3-4 times, sometimes only 2 times as long as broad, usually 6-18 \times 1.5-6 cm., but sometimes smaller, acute or obtuse, narrowing rather gradually into a petiole, slightly dentate, rarely almost entire, never lobed, firm to almost coriaceous in texture, often rather paler, rarely glaucous underneath, glabrous or with a few hairs on the under surface, especially along the midrib, with closely reticulate veins conspicuous on the rather shiny upper surface, the midrib

protruding on the lower surface; inflorescence an axillary raceme, somewhat one sided, not or scarcely exceeding the length of the leaves; peduncle 8–16 cm. long, naked in the lower part, simple or rarely bearing a small leaf with a secondary branch in its axil, bearing flowers in pairs, sparsely pubescent; pedicels pubescent, rather slender, 4–8 mm. long; flowers cream-coloured in vivo, black when dry; perianth about 7 mm. long, glabrous or sparsely pubescent outside, glabrous within, tubular, curved to one side at the apex, separating into 4 segments at maturity, the segments narrow at the centre but dilated and concave at their tips; anthers subsessile in the concave tips of the perianth segments, broad, 1–1.5 mm. long; hypogynous glands 3, situated towards the anterior side of the flower, more or less globular, about 1 mm. diam., persistent; ovary consisting of one carpel, many seeded, on a gynophore about 4 mm. long at the time of pollination; style 4–5 mm. long, persistent, breaking out through the posterior side of the flower before the stigma is liberated; stigma oblique, dilated, the stigmatic surface somewhat cone-shaped; fruit a follicle, oval-oblong, 2.5–3.5 × 1–1.2 cm., very dark brown, straight along the anterior side, bearing the persistent style and stigma; seeds about 10, rather flat, 5–6 mm. diam. with a fine membraneous wing, 8–24 × 5–7 mm. with thickened margins.

This species inhabits the rain-forests, or moist situations in open forests at rather high altitudes in north-eastern New South Wales.

The species of *Lomatia* all show considerable variation, so that it is at times difficult to delimit them, and the situation is further complicated by hybridization which frequently appears to occur when two species are found associated in the field.

L. arborescens, however, appears to be specifically distinct from any of those previously described, and no intergrading forms are known. It is perhaps most closely related to *L. longifolia* R.Br., which is also somewhat arborescent in habit, and has short axillary racemes, but is readily distinguished from it by the much broader, lanceolate leaves. It differs from *L. Fraseri* R.Br. in the more glabrous leaves, branches and perianth, the more simple and shorter inflorescence, and the arborescent habit, and from *L. ilicifolia* R.Br. in the arborescent habit, less harsh leaf texture and lateral instead of terminal inflorescence with smaller and more slender flowers.

The leaves are somewhat variable in this species, being large, fairly evenly dentate in the shelter of rain-forests, and smaller, more ovate-lanceolate, sometimes glaucous, and less regularly toothed in more exposed situations.

Family SANTALACEAE.

Exocarpus nana Hook. f., a very small shrub only a few inches in height, has been previously recorded in New South Wales only from the Kosciusko Plateau. It also occurs in Tasmania. On the Barrington Tops it occurs chiefly in the grass-land association between the swamps and the *Eucalyptus pauciflora* forest at an altitude of about 4,800 feet.

Family WINTERACEAE.

Drimys purpurascens J. Vickery.—This shrub appears to be endemic to the Barrington Tops Plateau, where it occurs between 4,500 and 5,000 feet. It is common over a small area in the vicinity of Carey's Peak in a *Eucalyptus pauciflora*-*Poa caespitosa* association, but is not very widely distributed over the Plateau.

Drimys lanceolata Baill.—This locality is about the northern limit of this species. It occurs chiefly on the southern tablelands of New South Wales and

in Victoria and Tasmania. The form occurring here differs somewhat from the typical *D. lanceolata* in the tendency sometimes to have two carpels in the flower instead of one only, and in the sub-sessile, spatulate leaves. We have no complete flowers, nor mature fruits of this form, but in other respects it appears to be very close to the variable *D. lanceolata*. It occurs here associated with *D. purpurascens*, but is rather more widely distributed over the plateau.

Family MONIMIACEAE.

Atherosperma moschatum Labill. occurs on the Barrington Tops Plateau at 4,000–5,000 feet along sheltered creeks. This is probably the most northerly locality at which it grows. It occurs chiefly at high altitudes in the Blue Mountains and southern parts of New South Wales, and in Victoria and Tasmania.

Family LAURACEAE.

The Williams River rain-forest is about the southernmost limit for *Cryptocarya erythroxylon* Maiden and Betcher, *C. obovata* R.Br., and *Endiandra Muelleri* Meissn. These three species are found in the sub-tropical rain-forests of the northern parts of New South Wales and in Queensland.

Family PITTOSPORACEAE.

Billardiera longiflora Labill. has previously been recorded only from the Blue Mountains in this State, and from Victoria and Tasmania.

Family LEGUMINOSAE.

Acacia elata A. Cunn. is at about the northern limit of its range here. It is best developed in the impure sub-tropical rain-forests of the Blue Mountains, and is not common in the Williams River district.

Acacia Clunies-Rossiae Maiden was described from Yerranderie, and appears to have been collected previously only from near that district. The specimens from Barrington Tops agree very closely with the type in all respects, except in the fruit, which is considerably broader and slightly shorter, i.e., about 2–4.5 × 0.9–1.1 cm., with a stipe about 3–4 mm. long. (In the typical *A. Clunies-Rossiae* the fruit is about 3–7 × 0.5–0.7 cm., with a stipe about 3–4 mm. long.)

Pultenaea fasciculata Benth. has not been found between the Kosciusko Plateau and the Barrington Tops. It is present also in Victoria at high altitudes and in Tasmania.

Family RUTACEAE.

Pleiococca Wilcoxiana F.v.M. is at about its southern limit in the sub-tropical rain-forest of the Williams River.

EVODIA MICROCOCCA F.v.M. var. *PUBESCENS*, n. var.—Ab typo foliis molliter pubescentibus subter etiam saepe supra, et superficientibus externis petalorum plerumque pubescentibus differt. Bellingen (L. Fraser and J. Vickery, 26/1/1936, Type); Little River (Swain, 3/1910; L. Fraser and J. Vickery, 31/12/1934); Williams River (L. Fraser and J. Vickery, 8/1930); Ourimbah (J. L. Boorman, 1/1903). This variety differs from the type in the softly pubescent undersides and often also the upper surfaces of the leaves, and in the usually pubescent outer surfaces of the petals.

This variety is very easily distinguished in the field, the pubescent character of the leaves giving them a soft, velvety texture. The variety and the type are not infrequently found growing together in some districts. In the Williams River sub-tropical rain-forest this variety only has been found.

Family POLYGALACEAE.

Comesperma sylvestre Lindl. is at about its southern limit on the Barrington Tops. It is found chiefly on the northern highlands of New South Wales and in Queensland.

Family SAPINDACEAE.

Arytera foveolata Radlk. is at about its southern limit in the sub-tropical rain-forests of the Williams River.

Family VITACEAE.

Cayratia sp.—A species of *Cayratia* Juss. (*Cissus* L.) which was stated in a communication from the Royal Botanic Gardens, Kew, during 1936, to be probably an undescribed species near *Cissus* (*Cayratia*) *japonica* (Thunb.) Willd., occurs in the rain-forest of the Williams River district. This form has already been recorded from the Comboyne Plateau by Chisholm (1937), and has also been observed by the writers on the Dorrigo Plateau.

Family FLACOURTIACEAE.

Streptothamus Beckleri F.v.M. is found at high altitudes in northern New South Wales and Queensland. The Barrington Tops is the most southern locality from which it has been recorded. It occurs here in the sub-antarctic rain-forest associated with *Nothofagus Moorei* at an altitude of about 4,000 feet.

Family MYRTACEAE.

Syncarpia laurifolia Ten. var. *glabra* Benth. was described from the Hastings River (*Flora Australiensis*, iii, p. 266). It is apparently a rare tree, as there is no material in the Sydney National Herbarium. A very few plants only have been observed in the Williams River rain-forest, where the normal *Syncarpia laurifolia* is common.

Myrtus Beckleri F.v.M. is at about its southern limit in the Williams River sub-tropical rain-forest.

Baeckea Gunniana Schau. var. *latifolia* Benth. occurs mainly on the Kosciusko Plateau and other southern highlands of New South Wales. It is probably at its northern limit on the Barrington Tops Plateau.

Family HALORRHAGACEAE.

Myriophyllum pedunculatum Hook. f. occurs in the creeks of the Barrington Tops Plateau up to about 4,800 feet. It occurs in Tasmania, and at Kosciusko, and has not previously been recorded north of the Blue Mountains.

Family ERICACEAE.

Gaultheria appressa A. W. Hill (*Journ. Linn. Soc. London*, Bot. xlix, 1935, p. 622).—This species had previously been included with *G. hispida* R.Br. (Prod., 1810, p. 559). *G. hispida*, however, was described from Tasmania, and as it differs in several respects from the form occurring on the Australian mainland, that name is now restricted to the Tasmanian species. *G. appressa* is recorded from the Australian Alps and environs, the Blue Mountains and Barrington Tops, which is apparently its northern limit. In this district it is a common shrub at an altitude of about 4,500 feet.

Family EPACRIDACEAE.

EPACRIS MICROPHYLLA R.Br. var. RHOMBIFOLIA, n. var.—Ab typo foliis manifeste et breviter petiolaribus, plus vel minus appressis, sub-acutis nunquam acuminatis,

callo parvissimo ad summam, haud vel vix caudatis ad basem, rhomboidalibus; sepalis minus incurvatis ad corollam, et habito elatioro erectioro differt. Barrington Tops: 4,500 feet (L. Fraser and J. Vickery, 7/1/1934, Type); 5,100 feet (J. L. Boorman, 12/1915; L. Harrison, 1/1925); Wingello (J. L. Boorman, 12/1899). This variety differs from the type in the leaves, which are distinctly but shortly petiolate, more or less appressed, sub-acute with a very small callous point, never acuminate, not or scarcely cordate at the base, rather rhomboidal in shape, and in the sepals which are less incurved towards the corolla, and in the taller, more erect habit. It occurs beside creeks on the Barrington Tops Plateau usually at an altitude of 4,500–4,800 feet.

Family MYRSINACEAE.

Embelia australasica Mez, a liane of the northern sub-tropical rain-forests, occurs in the Williams River rain-forest at about its southern limit.

Family LOGANIACEAE.

Mitrasacme serpyllifolia R.Br. occurs also on the Blue Mountains and in Victoria and Tasmania. The Barrington Tops is probably the most northern locality of this species.

Family GENTIANACEAE.

Gentiana diemensis Griseb.—Specimens from the Barrington Tops differ from those of the Australian Alps in being larger and stouter, of annual habit, the lateral branches terminated by long (3–13 cm.), single-flowered pedicels, and the apex terminated by a corymb of four flowers in two opposite pairs, and by the longer calyx segments. Further study of more extensive material may show that this is a distinct variety. In New South Wales *Gentiana* spp. are only known from the Australian Alps and the Barrington Tops.

Family APOCYNACEAE.

Parsonsia velutina R.Br. has not been recorded south of the Williams River valley. It occurs in the sub-tropical rain-forests of the north coast and in Queensland.

Family RUBIACEAE.

Coclospermum paniculatum F.v.M. is a species of the northern sub-tropical rain-forests which has not been recorded south of the Williams River.

Family PLANTAGINACEAE.

PLANTAGO PALUSTRIS, n. sp. Text-fig. 2.

Herba perennis acaulis, collo brevissimo crasso; collum stuppis fuscis densum; folia stellatim patentia vel adscendentia, aliquando tenuia, nunquam carnosae, paulo pilosa praesertim ad basem, vel tandem glabrescentia ad summam, lanceolata, acuta, integra, 3- vel sub-5-nervata, ad basem in petiolum planum vaginatum margine scariosum contracta; laminae cum petiolis 2.5–8 × 0.4–1.5 cm.; vena prima et venae tenues laterales paulo prominentes subter; pedunculi brevissimi, 1–4 mm. longi cum floribus, postea elongati, 8–15 cm. longi cum fructibus maturescentibus, molliter pubescentes, dense pubescentes sub spicam; spica paucis- (2–6-plerumque 3-) floribus, capitata 3–5 mm. diam., stuppis inter flores; bracteoli 1–2 mm. longi, duplo breviores vel raro sub-aequilongi sepalis, late ovati, acuti, carinati, margine scariosi, glabrescentes; sepala 4, ovata, acuta vel brevissime mucronata, carinata, 2.5 mm. longa; tubus corollae glabrescens, sepalis aequilongis, segmentis 4 acutis

angustato-ovatis, patentibus vel sub-refractis, duplo brevioribus tubo; stamina 4, exserta, filamenta sedentia ad mediam corollam; anthera 0.5 mm. longa, ovata, mucrone breve; ovarium globosum vel aliquando sub-tetragonale, 1.2 mm. diam., bilocularis, 4-ovulatum; loculus 2-ovulatus; stylus 9 mm. longus, pubescens praeter ad basem; pyxidium sub-globosum vel paulo conicum ad summam, mucro breve, 2.5-3 mm. diam., plerumque 4-seminis; semina ovalia, plana, 2×1 mm., fulva.

Loc.—Barrington Tops in swamp, at 4,800 feet (L. Fraser and J. Vickery, 7/1/1934, Type).

Rosette perennial with a very short, rather thickened stem crowded with tufts of long brownish hairs; leaves stellately spreading or ascending, rather thin, never fleshy, slightly hairy, especially towards the base, or sometimes becoming almost glabrous towards the tip, lanceolate, acute, entire, 3- or sub-5-nerved, becoming narrowed at the base into the flat, sheathing petiole which has scarious margins; laminae with petioles 2.5-8 \times 0.4-1.5 cm.; midrib and the fine lateral veins slightly prominent on the lower surface; peduncles very short, 1-4 mm. at the time of flowering, but elongating up to about 15 cm. as the fruit matures, softly pubescent, densely so immediately under the spike; spike few- (2-6- usually 3-) flowered, capitate, 3-5 mm. diam., with tufts of hairs between the flowers; bracteoles 1.2 mm. long, shorter than or rarely subequal to the calyx, broadly ovate, acute, keeled, with scarious margins, glabrous; sepals 4, ovate, acute or very shortly mucronate, keeled, 2.5 mm. long; corolla tube glabrous, equalling the calyx, with four acute, narrow ovate, spreading or slightly reflexed segments half as long as the tube; stamens 4, exserted, the filaments fused to the corolla tube half-way down; anthers 0.5 mm. long, ovate, with a short point; style 9 mm. long,



Text-fig. 2.—*Plantago palustris*. A, plant showing elongated peduncles bearing the fruit, $\times 0.4$; B, plant showing rosette form, and extremely short peduncles bearing the flowers, $\times 0.4$; C, inflorescence at anthesis, $\times 5.6$; D, inflorescence showing fruit, $\times 5.6$; E, gynacium, $\times 3.5$; F, septum of ovary bearing two ovules, $\times 10.8$; G, anther, $\times 18$.

pubescent except at the base; ovary globose or very slightly 4-lobed; 1.2 mm. in diam., 2-celled, with two ovules in each cell; fruit a pyxidium, sub-globose or slightly conical in the upper part, with a short point left by the base of the style, usually 4-seeded, 2.5-3 mm. diam.; seeds oval, flattened, 2×1 mm., light brown in colour.

This species is only known from the margins of the swamps of the Barrington Tops Plateau, to which it appears to be endemic. Superficially, it somewhat resembles *P. stellaris* F.v.M., which occurs in the Australian Alps, but differs from it in the less stellate habit, in the peduncle elongating very conspicuously after pollination, the less conspicuously thick roots, the sparsely hairy and less fleshy leaves, and the four seeds in the fruit. It differs from *P. Brownii* Rapin, which is known from the Australian Alps and Tasmania, in the peduncles, which are shorter than in *P. Brownii* before pollination and much longer afterwards, and in the entire, hairy leaves and less stellate habit.

Family GOODENIACEAE.

Velleia montana Hook. f. is present at about its most northern limit. It occurs on the Blue Mountains in this State, and in Victoria and Tasmania.

Family COMPOSITAE.

Cotula filicula Hook. f. has only previously been recorded from southern New South Wales. It occurs also in Victoria and Tasmania. On the Barrington Tops it occurs in *Eucalyptus pauciflora* forest at an altitude of about 4,500 feet.

Erigeron pappochromus Labill. is found at high altitudes in the southern parts of the State, and in Tasmania and Victoria, and has not previously been recorded so far north.

Summary.

The distribution of a number of species occurring in the Upper Williams River and Barrington Tops districts is considered. Many species growing on the Barrington Tops Plateau show interesting affinities with the floras of the Kosciusko Plateau (N.S.W.) and Tasmania.

Two species, *Pollinia nuda* Trin. (exotic) and *Panicum lachnophyllum* R.Br. are recorded as new for New South Wales.

Two new species, *Lomatia arborescens* and *Plantago palustris*, and two new varieties, *Evodia micrococca* var. *pubescens* and *Epacris microphylla* var. *rhombifolia* are described. Two new combinations, *Lomandra montana* (R.Br.) and *L. Hystrix* (R.Br.) are cited.

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